

BB1333USCIP (DPNT0003-100)**Application No.: 10/059,909****REMARKS**

Claims 1-13 were pending. Claims 1-4 and 7-13 were rejected. Claims 5 and 6 were objected to.

Upon entry of this amendment, claims 1-13 will be pending.

No new matter has been added.

Summary Of The Invention

The present invention provides isolated polynucleotides encoding lipoxygenase polypeptides. Lipoxygenases catalyze the hyperperoxidation of polyunsaturated fatty acids in the first step of fatty acid metabolite synthesis. Presently claimed are nucleic acid sequences encoding lipoxygenase, cells, plants and seeds comprising the nucleic acids, and methods for using the same.

Sequence Listing

The Office indicates that "it is unclear what region of SEQ ID NO:15 encodes SEQ ID NO:16." Applicant notes that nucleotides 235-2895 of SEQ ID NO:15 encode the amino acid sequence of SEQ ID NO:16 (specification, page 26, lines 20-22).

Specification

As requested by the Examiner, Applicant has amended the specification to update the status of the related application serial number 09/501,422.

Rejections under 35 U.S.C. §112, first paragraph**Enablement**

Claims 1-4 and 7-13 are rejected under 35 U.S.C. §112, first paragraph, allegedly because the "specification, while being enabling for SEQ ID NO:15 or a sequence encoding SEQ ID NO:16, does not reasonably provide enablement for sequences encoding polypeptides having less than 100% sequence identity with SEQ ID NO:16" The Office further alleges that "[w]hile one skilled in the art can readily make base changes, further guidance is necessary as to what changes would be tolerated without undue experimentation." (Office Action, pages 3-4). Applicant respectfully traverses.

One skilled in the art, having read the present specification, could make and use the claimed invention without undue experimentation. The skilled artisan, upon

BB1333USCIP (DPNT0003-100)**Application No.: 10/059,909**

reviewing the present specification, could readily determine which changes to SEQ ID NO:16 "would be tolerated". (see, for example, pages 26 and 27). The skilled artisan could also readily determine which polypeptides retain lipoxygenase activity using any of the numerous assays known in the art. As set forth on page 33 of the application as filed "[a]ssays may be conducted under well known experimental conditions which permit optimal enzymatic activity of the lipoxygenase as presented by Grossman and Zakut (1979) *Methods Biochem. Anal.* 25:303-329."

Notwithstanding the foregoing, Applicants respectfully point out that claims 2-4 recite 85%, 90% and 95% sequence identity to SEQ ID NO:16, respectively.

Because one skilled in the art could make and use the claimed invention without undue experimentation, Applicant respectfully requests withdrawal of the enablement rejection.

Written Description

Claims 1-4 and 7-13 stand rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement. The Office alleges that "Applicant does not disclose a representative number of species as encompassed by these claims."

Because Applicant discloses "representative functional characteristics ... coupled with a known or disclosed correlation between function and structure", Applicant does not agree. For example, Applicant provides a representative species of the genus. There is actual reduction to practice of SEQ ID NO:15 (nucleotide sequence) and SEQ ID NO:16 (polypeptide sequence). The pending claims all recite both structure and function. There is no substantial structural variation between species since all of the species within the genus must have significant sequence identity to SEQ ID NO:16. The specification sets forth further structural features that characterize lipoxygenases (see, for example, pages 26-27).

Notwithstanding the foregoing, Applicants respectfully point out that claims 2-4 recite 85%, 90% and 95% sequence identity to SEQ ID NO:16, respectively

One of skill in the art would conclude that Applicant was in possession of the necessary common attributes possessed by the members of the claimed genus and that the disclosure meets the requirements of 35 U.S.C. §112, first paragraph, as providing adequate written description for the claimed invention. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the Section 112, 1st paragraph.

BB1333USCIP (DPNT0003-100)

Application No.: 10/059,909

Objections to the Claims

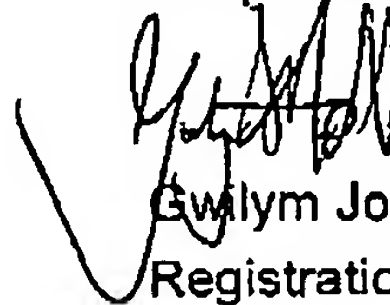
Claims 5 and 6 were objected "as being dependent on rejected claims but would be allowable if rewritten as independent claims." The Office acknowledges that "SEQ ID NO:15 and a nucleotide sequence encoding SEQ ID NO:16 are free of the prior art." (Office Action, page 4).

Applicant may rewrite claims 5 and 6 in independent form in the event that claim 1 as amended is not found allowable.

Conclusion

The examination of these claims and passage to allowance are respectfully requested. An early Notice of Allowance is therefore earnestly solicited. Applicant invites the Examiner to contact the undersigned at (215) 665-6904 to clarify any unresolved issues raised by this response.

Respectfully submitted,



Gwilym John Owen Attwell

Registration No. 45,449

Date: **September 9, 2004**
 COZEN O'CONNOR, P.C.
 1900 Market Street
 Philadelphia, PA 19103-3508
 Telephone: (215) 665-2000
 Facsimile: (215) 701-2004